

REMARKS

I. STATUS OF THE CLAIMS

Claims 8-19, which were withdrawn from consideration, are canceled herein.

New claims 20-35 are added. Support for the new claims is found, for example, in FIGS. 4 and 5, and the disclosure on page 13, line 12, through page 16, line 10, of the specification. It should also be noted that claim 1 (which is currently under consideration) is also supported by these figures and these portions of the specification.

Although claims 2-7 are not currently under consideration, it is respectfully submitted that these claims should be allowed if claim 1 is allowed, since claims 2-7 are dependent from claim 1.

In view of the above, it is respectfully submitted that claims 1-7 and 20-35 are currently pending.

II. REJECTION OF CLAIM 1 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER INOUE

The present invention as recited, for example, in claim 1, relates to a light output control circuit comprising (a) a photodetector which detects the light output of a light-emitting device, to thereby provide a light output detection value; (b) a comparator which compares the light output detection value with a reference value, to thereby provide a comparison result; and (c) a light output control device which performs discrete control actions to control the light output of the light-emitting device in accordance with the comparison result.

Further, the light output control circuit comprises **a switching circuit which counts the number of control actions performed by the light output control device, and which instructs the light output control device to perform control in accordance with a power-up mode until the number of control actions after starting control reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached said predetermined value.**

For example, in FIG. 4, coarse/fine switching circuit 26 and other components in FIG. 4 together count the number of control actions, and instruct to perform control in accordance with a power-up mode until the number of control actions after starting control

reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached said predetermined value. FIG. 5 shows detailed control, and shows operation in power-up mode and steady state mode.

As disclosed, for example, in column 13, lines 12-15, of Inoue, Inoue changes control mode based on the current value lth. Inoue does not disclose or suggest control based on the number of control actions as recited, for example, in claim 1. See also new claims 20-35.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. IDS

An IDS was filed on March 10, 2003. It is respectfully requested that the Examiner acknowledge the IDS.

IV. CONCLUSION

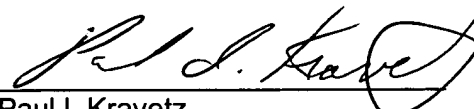
In view of the above, it is respectfully submitted that the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please CANCEL claims 8-19, without prejudice or disclaimer.

Please AMEND the claims, and add NEW claims as indicated below:

1. (CURRENTLY AMENDED) A light output control circuit comprising:
a photodetector which detects the light output of a light-emitting device, to thereby provide a light output detection value;
a comparator which compares [a] the light output detection value with a reference value, to thereby provide a comparison result;
a light output control device which performs discrete control actions to control [controls] the light output of said light-emitting device [in a discrete manner] in accordance with the comparison result [of said comparison output from said comparator]; and
a switching circuit which counts the number of control actions performed by said light output control device, and which instructs said light output control device to perform control in accordance with a power-up mode until the number of control actions after starting [the] control reaches a predetermined value, and to perform control in accordance with a steady-state mode after the number of control actions has reached said predetermined value.
2. (WITHDRAWN) A light output control circuit according to claim 1, further comprising a clock control circuit which detects data to be supplied to said light-emitting device, generates a clock in accordance with the result of said detection, and supplies said clock as a timing signal indicating control timing to said light output control device and said switching circuit.
3. (WITHDRAWN) A light output control circuit according to claim 2, wherein said switching circuit sets the amount of change of a control value per control action in said light output control device in said power-up mode to a first amount of change, and sets the amount of change of the control value per control action in said light output control device in said steady-state mode to a second amount of change that is smaller than said first amount of change.
4. (WITHDRAWN) A light output control circuit according to claim 3, wherein

said switching circuit incrementally reduces said first amount of change in said power-up mode over a plurality of stages.

5. (WITHDRAWN) A light output control circuit according to claim 4, wherein said first amount of change is reduced using a bisection method.

6. (WITHDRAWN) A light output control circuit according to claim 5, further comprising an update permit control circuit which permits said light output control device to update said control value in a prescribed cycle in said steady-state mode.

7. (WITHDRAWN) A light output control circuit according to claim 6, wherein a frequency band of a drive current for said light-emitting device is set narrower in said steady-state mode than in said power-up mode.

8. (CANCELED)

9. (CANCELED)

10. (CANCELED)

11. (CANCELED)

12. (CANCELED)

13. (CANCELED)

14. (CANCELED)

15. (CANCELED)

16. (CANCELED)

17. (CANCELED)

18. (CANCELED)

19. (CANCELED)

20. (NEW) A light output control circuit according to claim 1, wherein, in relative terms, control of the light output of said light-emitting device by the light output control device during the power-up mode is coarse, and control of the light output of said light-emitting device by the light output control device during the steady-state mode is fine.

21. (NEW) A light output control circuit according to claim 2, wherein, in relative terms, control of the light output of said light-emitting device by the light output control device during the power-up mode is coarse, and control of the light output of said light-emitting device by the light output control device during the steady-state mode is fine.

22. (NEW) An apparatus comprising:

- a detector detecting light output from a light emitting device, to thereby produce a detection value;
- a comparator comparing the detection value with a reference value, to thereby produce a comparison result;
- a counter performing discrete count operations to increase or decrease a count value in accordance with the comparison result, the light emitting device being controlled in accordance with the count value to thereby control the light output from the light emitting device; and
- a controller causing the light emitting device to be controlled in accordance with a power-up mode until the number of count operations after starting control reaches a predetermined value, and causing the light emitting device to be controlled in accordance with a steady-state mode after the number of control operations reaches the predetermined value.

23. (NEW) An apparatus according to claim 22, wherein, in relative terms, control of the light emitting device during the power-up mode is coarse, and control of the light emitting device during the steady-state mode is fine.

24. (NEW) An apparatus according to claim 22, wherein the light emitting device is a laser diode.

25. (NEW) An apparatus according to claim 23, wherein the light emitting device is a laser diode.

26. (NEW) An apparatus comprising:
a counter performing discrete count operations to increase or decrease a count value in accordance with changes in light output from a light emitting device, the light emitting device being controlled in accordance with the count value to thereby control the light output from the light emitting device; and
a controller causing the light emitting device to be controlled in accordance with a power-up mode until the number of count operations after starting control reaches a predetermined value, and causing the light emitting device to be controlled in accordance with a steady-state mode after the number of count operations reaches the predetermined value.

27. (NEW) An apparatus according to claim 26, wherein, in relative terms, control of the light emitting device during the power-up mode is coarse, and control of the light emitting device during the steady-state mode is fine.

28. (NEW) An apparatus according to claim 26, wherein the light emitting device is a laser diode.

29. (NEW) An apparatus according to claim 27, wherein the light emitting device is a laser diode.

30. (NEW) An apparatus comprising:
means for performing discrete count operations to increase or decrease a count value in accordance with changes in light output from a light emitting device, the light emitting device being controlled in accordance with the count value to thereby control the light output from the light emitting device; and

means for causing the light emitting device to be controlled in accordance with a power-up mode until the number of count operations after starting control reaches a predetermined value, and causing the light emitting device to be controlled in accordance with a steady-state mode after the number of count operations reaches the predetermined value.

31. (NEW) A method comprising:

performing discrete count operations to increase or decrease a count value in accordance with changes in light output from a light emitting device, the light emitting device being controlled in accordance with the count value to thereby control the light output from the light emitting device;

causing the light emitting device to be controlled in accordance with a power-up mode until the number of count operations after starting control reaches a predetermined value; and

causing the light emitting device to be controlled in accordance with a steady-state mode after the number of count operations reaches the predetermined value.

32. (NEW) An apparatus comprising:

a laser diode emitting light;

a counter performing discrete count operations to increase or decrease a count value in accordance with changes in the light emitted from the laser diode, the laser diode being controlled in accordance with the count value to thereby control the light emitted from the laser diode; and

a controller causing the laser diode to be controlled in accordance with a power-up mode until the number of count operations after starting control reaches a predetermined value, and causing the laser diode to be controlled in accordance with a steady-state mode after the number of count operations reaches the predetermined value.

33. (NEW) An apparatus according to claim 32, wherein, in relative terms, control of the laser diode during the power-up mode is coarse, and control of the laser diode during the steady-state mode is fine.

34. (NEW) An apparatus comprising:

a laser diode emitting light;
a counter performing discrete count operations to increase or decrease a count value in accordance with changes in the light emitted from the laser diode, the laser diode being controlled in accordance with the count value to thereby control the light emitted from the laser diode; and
a controller causing the laser diode to be controlled so that,
until the number of count operations after starting control reaches a predetermined value, the count operations increase or decrease the count value by a first amount, and
after the number of count operations reaches the predetermined value, the count operations increase or decrease the count value by a second amount, the second amount being smaller than the first amount.

35. (NEW) An apparatus comprising:
a laser diode emitting light;
a counter performing discrete count operations to increase or decrease a count value in accordance with changes in the light emitted from the laser diode, the laser diode being controlled in accordance with the count value to thereby control the light emitted from the laser diode; and
means for causing the laser diode to be controlled so that,
until the number of count operations after starting control reaches a predetermined value, the count operations increase or decrease the count value by a first amount, and
after the number of count operations reaches the predetermined value, the count operations increase or decrease the count value by a second amount, the second amount being smaller than the first amount.